PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

DN A01463

In re application of
Brian Michael Bridgewater, et al..

Serial No. 10/700,078 Group Art Unit: 1714

Filed: November 3, 2003 Examiner: V. Nerangis

For: AQUEOUS ACRYLIC EMULSION POLYMER COMPOSITION

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF FOR APPELLANTS

This is an appeal from the final rejection by the Examiner of April 30, 2009 rejecting claims 1-7 and 15-18. Appellants filed a Notice of Appeal pursuant to 37 C.F.R. 1.191 on July 30, 2009.

An authorization to charge payment of the fee for the filing of the Appeal Brief to Deposit Account 18-1850 is also enclosed.

REAL PARTY IN INTEREST [37 C.F.R. 41.37(c)(1)(i)]

The real party in interest is Rohm and Haas Company, 100 Independence Mall West, Philadelphia, PA 19106-2399, which is a wholly owned subsidiary of The Dow Chemical Company, Midland, MI, as of April 1, 2009.

RELATED APPEALS AND INTERFERENCES [37 C.F.R. 41.37(c)(1)(ii)]

Appeal No. 2007-0504 (Application 10/700,078; Technology Center 1700). Decided: June 28, 2007.

STATUS OF CLAIMS [37 C.F.R. 41.37(c)(1)(iii)]

The status of the claims is as follows:

Allowed claims	-	none
Claims objected to	-	none
Claims cancelled	-	8 and 9
Claims pending	-	1-7 and 10-18
Claims withdrawn from consideration	-	10-14
Claims rejected	-	1-7 and 15-18
Claims on appeal	-	1-7 and 10-18

STATUS OF AMENDMENTS [37 C.F.R. 41.37(c)(1)(iv)]

The rejected claims are set out in Appendix 1. No amendments were filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER [37 C.F.R. 41.37(c)(1)(v)]

Appellants claim (claim 2, original, support in the specification on page 3, lines 10-26): "An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer

having a Tg of –10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer."

Appellants also claim (claim 1, original, support in the specification on page 2, line 24, to page 3, line 9) similarly, except: "...wherein the emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer."

That is, among other differences, claim 1 additionally uses 0.001 to 0.05 moles of chain transfer agent/kg of monomer.

GROUNDS OF REJECTION [37 C.F.R. 41.37(c)(1)(vi)]

The first issue is whether appellant's invention of claims 2-5, 7 and 17 is unpatentable under 35 USC 102(b) over US 5,731,377 to Friel ("Friel").

And the second issue is whether appellant's invention of claims 1-7 and 15-18 is obvious under 35 USC 103(a) over Friel.

The Rejections

Claims 2-5, 7 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Friel (U.S. 5,731,377)

Claim 6 stands rejected under 35 U.S.C. §103(a) as obvious over Friel.

Claims 1, 3-7, and 16 stand rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Ishikawa (US 4,325,856, "Ishikawa").

Claim 15 stands rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Ishikawa and further in view of Bricker (US 5,502,089, "Bricker").

Claim 18 stands rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Bricker.

The Examiner's Arguments

The Examiner asserts that claims 1-7 and 15-18 stand finally rejected under 35 USC 102(b) or, in the alternative, under 35 USC 103(a) as being unpatentable over the prior art as represented by Friel.

The rejection has cited case law to support the contention that "even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself". That is, the rejection alleges that the inventive process produces the same product as that described in Friel. Additionally, the rejection states: "given that the final products appear to be the same, it would have been obvious to one of ordinary skill in the art to obtain the presently claimed product with a different process." (Office Action of December 3, 2008, paragraph 4, and incorporated by reference in the Final Office Action of April 30, 2009, page 2, paragraph 4).

ARGUMENT [37 C.F.R. 41.37(c)(1)(vii)]

Claim Rejections: 35 U.S.C. §102(b) /103

Claims 2-5, 7 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Friel (U.S. 5,731,377), hereafter "Friel".

Claim Rejections: 35 U.S.C. §102(b)

Claims 2-5 and 7

Appellants assert that claims 2-5 and 7 are not anticipated by Friel. Initially, it should be noted that the rejection does not suggest that Friel describes a composition that fits each and every limitation of any of Appellants' claims. Instead, the rejection has cited case law to support the contention that "even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself". That is, the rejection alleges that the inventive process produces the same product as that described in Friel. However, given this rule, the instantly recited process begets a different polymer than a polymer made from the same monomer mixture by the process of Friel and the rejection should therefore be withdrawn.

Appellants argue that their claims 2-5 and 7 are not unpatentable over Friel under 35 USC 102(b) because both the data presented in the original application as filed and the data presented in the Declaration (Declaration of Ralph C. Even, under Rule 132, dated March 3, 2009) demonstrate significant improvement for the inventive polymers over those of the prior art. Specifically, the appellants have shown that the data refute the assumption that, on the basis of similarities in monomer compositions, it may be concluded that emulsion polymers made by a given process are the same as, or obvious in light of, emulsion polymers made by another process.

The rejection, to be proper, must provide evidence that the product produced in Friel is the same as the product produced by the current inventive process and has failed to do this. *Appellants have produced data showing that the products are not the same.* In the Declaration of Ralph C. Even of December 21, 2007,

appellants provided chromatograms comparing pairs of polymers: in each case, one polymer prepared via the inventive process of the instantly recited claims, the other polymer prepared using a comparative process. The chromatograms showed that for each pairing, the inventive process has a much more pronounced elution due to low molecular weight polymers. The chromatograms were presented to demonstrate that the products of the inventive process are different to those made in Friel. Such was acknowledged on the record by the Examiner following presentation of the chromatograms at a personal interview (August 15, 2007). The chromatograms were originally presented in color with the key also in color. Appellants submitted a further Declaration of Ralph C. Even, under Rule 132, dated March 3, 2009, which re-produced the chromatograms (of the unformulated polymers) for purposes of clarification for the record.

Additionally, the Declaration of March 3, 2009 provided further support, by way of scrub resistance data, that the products are not the same. For example, scrub resistance data was obtained for paints made from polymer AH-301 and polymer AH-303. AH-301 is the polymer of Friel's Example 3, cited as art, prepared in identical fashion to that in Friel. AH-303 has the same polymer composition (monomer types and amounts) as Friel's Example 3, but is prepared by the inventive process. For the scrub resistance data, it was pointed out (Declaration of Ralph C. Even of March 3, 2009, paragraph 10 and Appendix B; and again in the Response of June 30, 2009, page 4, second paragraph) that, contrary to the Examiner's statements (Office Action of April 30, 2009, page 4, third paragraph, and again, Advisory Action of August 10, 2009, page 2, fourth paragraph), *these two polymers were identically formulated with exactly the same amount and type of rheology modifier* (Declaration of March 3, 2009, Appendix B). For example, in Appendix B, the column labeled "Paint 5" shows the amounts of ingredients (in grams) used to make Paint 5. It uses binder 1, which is AH-301 of the Declaration, made by the process of Friel (Comparative). The column labeled "Paint 6" shows identical ingredients except it uses the inventive binder 2, which is AH-303 of the Declaration (and has the same

monomer composition as AH-301, but is made by the inventive process). Corrected for solids, they add the same quantity of binder (in terms of solids) into each paint. Both paints use 27.67 g of rheology modifier RM-1020 and no RM-825. The rheology modifier addition (both type and amount) is the same in both Paint 5 and Paint 6. Paints 5 and 6 are therefore identical except for the binder.

Like the chromatograms (of the unformulated polymer), the scrub resistance data (for these and other inventive-comparative pairs) clearly show that the polymer obtained by the inventive process is not the same as that prepared by the cited art process.

The §102(b) rejection is, therefore, clearly improper and should be withdrawn.

Claim 17

For all of the reasons discussed above, claim 17 is also novel with respect to the cited art.

Claim Rejections: 35 U.S.C. §103(a)

In the alternative, claims 2-5, 7 and 17 stand rejected under 35 U.S.C. §103(a) as obvious over Friel.

Claims 2-5 and 7

Appellants assert that claims 2-5 and 7 are not obvious over Friel. One skilled in the art would not consult Friel in attempting to solve the problem considered by the Appellants. Appellants' stated objective (specification, page 2, lines 3-9) is to provide a dry coating including a predominantly acrylic emulsion polymer binder, which coating exhibits at least one of improved scrub resistance and improved dirt pick-up resistance.

Appellants instantly recite a single polymer that is hard enough to provide improved scrub resistance or improved dirt pick-up resistance, but still able to form good films (without the use of added volatile organic compounds, VOC's, as is the current art practice). Friel fails to provide a single polymer solution to the problem.

One skilled in the art would not consult Friel in attempting to solve the problem considered by the Appellants, at least because the objective is to find a single polymer solution. Friel's polymer blend, an imperfect solution, is a manifestation of the difficulty of solving this industry-wide problem *via* a single polymer solution. It would not be obvious to one skilled in the art to consult Friel and select two soft polymers as examples of an obvious process to form hard coatings. The rejection of record states: "Friel exemplifies the use of two soft polymers (Sample 3 and Sample 7) where Sample 3 contains...and Sample 7 contains..." Both of these polymers exhibit zero block resistance (Friel, Table 4, first and second rows; see Friel column 3, line 60, to column 4, line 7, for an explanation of block resistance), which means that if two painted surfaces come into contact with one another (for example a painted window frame being closed in a painted window casing), the films will stick and rip completely upon separation. One skilled in the art seeking hard polymer films with good dirt pick up resistance would view any such process described in connection with these soft polymers as directly teaching away from the described process. The teaching of Friel effectively teaches away from Appellants' invention.

Appellants' original specification shows evidence of unexpected results for the products of the product-by-process claims (see, for example Table 4.1 in Example 4 on page 20 of the specification), and thus, the product resulting from the inventive process is not obvious with respect to Friel. The rejection has suggested that Appellants have not shown criticality for the presently claimed process on the final product, and the data submitted by Appellants has been found to not be reasonably commensurate in scope with the claimed invention with respect to amounts of initiator added during the first 10 wt % of monomer conversion.

The data submitted with the Declaration of Ralph C. Even of March 3, 2009 show that significantly improved scrub resistance may be obtained in the product of the inventive product-by-process of the instantly recited claims compared to the product from the product-by process of the cited art. The

product resulting from the inventive process is clearly different and the superior scrub resistance is unexpected considering the two polymers in each polymer pair have the same composition of monomers and are identically formulated. The criticality of the presently claimed process on the final product is well supported; compare, for example, the three pairs of polymers represented by polymers 1-6. For each pair, the product resulting from the inventive product-by-process of the instantly recited claims has superior scrub resistance compared to that resulting from the identically formulated (including the rheology modifer, see above) product-by process of the cited art. Moreover, Appellants have presented data that is reasonably commensurate in scope with the claimed invention.

Case law holds that data may be reasonably commensurate in scope with the claimed invention if a skilled artisan "could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value thereof." *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). The Declaration of Ralph C. Even of March 3, 2009 states that the data presented is sufficient for one skilled in the art to establish a reasonable correlation between the showing and the entire scope of the claim.

Moreover, case law also holds that "appellant is not required to test each and every species within the scope of the appealed claims." *Ex parte Winters*, 11 U.S.P.Q.2d 1387, 1988 Pat. App. LEXIS 39, *4 (B.P.A.I. 1989). "Rather, patentability is established by a showing of unexpected superiority for representative compounds within the scope of the appealed claims." *Id.* at *4-*5.

With respect to claim 2, the rejection has stated that "the exemplified amounts of initiator added during the first 10 wt % of monomer conversion (20, 23, 20, 10, 35, and 22.2 wt %) are not reasonably commensurate in scope with claimed less than half (i.e., 50 wt %)." Friel fails to disclose any addition of initiator in the first 10 wt. % of monomer conversion that is less than 50 wt%, as instantly recited in claim 2. The cited art does not overlap Appellants' claimed range, and Appellants should not have to compare beyond the scope of the cited

art. The invention disclosed by the appellants is directed to a new and inventive process for the polymerization. Conventionally, the initiator is added at the start of the polymerization (because it "initiates" or starts the polymerization reaction). Appellants have provided data points for which less than half of the initiator is added during the first 10 wt % of monomer conversion; specifically, amounts of initiator equal to 20, 23, 20, 10, 35, and 22.2 wt %. Appellants have therefore provided "a showing of unexpected superiority for representative compounds within the scope of the appealed claims." One skilled in the art would reasonably conclude from this body of data that the inventive process provides polymers exhibiting unexpected results when less than half of the initiator is added during the first 10 wt % of monomer conversion.

Similarly, for claim 1, both the total initiator amount and the amount of added initiator in the first 10 wt % of monomer conversion in Friel's process (which does not use a chain transfer agent as required in claim 1) are outside of Appellants' respective claim ranges. Again, Appellants have provided "a showing of unexpected superiority for representative compounds within the scope of the appealed claims."

Appellants respectfully submit that the data presented "establish the correlation between" the claimed compositions and desirable properties, and that in cases where the data do not reach claimed limits, "no factual basis appears in the record for expecting the compounds to behave differently" beyond the range of the data. *In re Cescon*, 474 F.2d 1331, 1334 (C.C.P.A. 1973). Appellants believe that their invention provides superior properties over the ranges disclosed in the specification.

Therefore, Appellants respectfully submit that their demonstration of unexpected results would overcome any suggestion of obviousness with respect to Friel. Friel neither teaches nor suggests how to obtain a product such as that obtained by the process of the instantly recited claims. Neither does Friel provide any motivation to the practitioner to modify his processes in manner provided by the current application.

The §103(a) rejection of claims 2-5 and 7 as obvious over Friel should be withdrawn.

Claim 17

For all of the reasons discussed above, claim 17 is also not obvious over Friel.

Claim Rejections: 35 U.S.C. §103(a)

Claim 6 stands rejected under 35 U.S.C. §103(a) as obvious over Friel. Claims 1, 3-7, and 16 stand rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Ishikawa (US 4,325,856, "Ishikawa"). Claim 15 stands rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Ishikawa and further in view of Bricker (US 5,502,089, "Bricker"). Claim 18 stands rejected under 35 U.S.C. §103(a) as obvious over Friel in view of Bricker.

Claims 1, 3-7, 15 and 18

Appellants contend that if claim 2 is patentable in light of Friel, then, for all of the reasons discussed above, claim 1 is also patentable over Friel in view of Ishikawa. Note that Ishikawa only has relevance to potentially fill the void in the teaching of Friel with respect to the required chain transfer agent in claim 1. Friel's soft polymers are completely unsuitable for the intended function. Addition of a chain transfer agent to Friel's soft polymers would only make them softer, so one skilled in the art would not consider combining these two references in pursuit of hard polymer films. Accordingly, Ishikawa is not combinable with Friel, since the intended function would be still further destroyed. Appellants assert that claim 1 is patentable over Friel in view of Ishikawa.

Further, Appellants contend that if independent claims 1 and 2 are both novel and inventive, then the dependent claims of claims 1 and 2 are also patentable. Accordingly, all of claims 1-7 and 15-18 are not obvious over Friel, even with supporting references, and the claims are therefore patentable.

Claim 16

For all of the reasons discussed above, claim 16 is also not obvious over Friel, even in view of Ishikawa.

Reconsideration of Restriction Requirement:

The original application included claims 1-9. The appellants had cancelled claims 8 and 9, and submitted new claims 10-14. Claims 10-14 were withdrawn from consideration by the Examiner as being directed to a process of making the composition of instant claims 1-7. However, a composition and the method of making the same are considered to be one and the same invention. See *In re Ochiai*, 71 F.3d 1565 (Fed. Cir. 1995). Appellants have insured that instant claim 10 includes all of the limitations of instant claim 2. Accordingly, Appellants respectfully request the rejoinder of Group I, claims 1-7, and Group II, claims 10-14 upon an indication of the allowability of the instant composition claims. See MPEP 8.21.04, 1st two paragraphs.

Conclusion

Appellants respectfully request the Board to reverse the Examiner's rejections and enter a Notice of Allowance. The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,

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DATE: September 30, 2009

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CLAIMS APPENDIX [37 C.F.R. 41.37(c)(1)(viii)]

CLAIMS 1-18

1. (Original) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a glass transition temperature (Tg) of –10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

2. (Original) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a Tg of –10 °C to 35 °C

wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

3. (Original) The aqueous coating composition of claim 1 or claim 2 wherein said aqueous acrylic emulsion polymer comprises, as copolymerized units based on dry polymer weight, from 50% to 99.65% by weight monoethylenically unsaturated nonionic (meth)acrylic monomer, from 0.1% to 12.5% by weight aldehyde reactive group-containing monomer, and from 0.25% to 10% by weight monoethylenically unsaturated acid monomer.

4. (Original) The aqueous coating composition of claim 1 or claim 2 further comprising from 2% to 40% by weight, based on the total dry polymer weight, of a second emulsion polymer that has a Tg of from 25 °C to 150 °C, wherein the Tg of said second polymer is at least 10 °C higher than the Tg of said aqueous acrylic emulsion polymer.

5. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC of 15 to 38 and having VOC less than 5% by weight based on the total weight of the coating composition.

6. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC greater than 38 and having VOC less than 3% by weight based on the total weight of the coating composition.

7. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC of 15 to 85 and having VOC less than 1.7% by weight based on the total weight of the coating composition.

8. (Canceled)

9. (Canceled)

10. (withdrawn) A process for forming an aqueous acrylic emulsion polymer, said polymer having a glass transition temperature (Tg) of −10 °C to 35 °C, wherein said emulsion polymer is formed by emulsion polymerization of monomers comprising from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

11. (withdrawn) A process for forming an aqueous acrylic emulsion polymer, said polymer having a glass transition temperature (Tg) of –10 °C to 35 °C, wherein said emulsion polymer is formed by emulsion polymerization of monomers comprising from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

12. (withdrawn) A process according to claim 9 wherein the polymer is formed in the presence of 0.001 to 0.05 moles of chain transfer agent/kg monomer.

13. (withdrawn) A process according to claim 9 wherein the polymer is formed in the presence of 0.0025 to 0.05 moles of chain transfer agent/kg monomer.

14. (withdrawn) A process according to claim 10 or 11 wherein the monomers comprise of from 50% to 99.65% by weight monoethylenically unsaturated nonionic (meth)acrylic monomer, from 0.1% to 12.5% by weight aldehyde

reactive group-containing monomer, and from 0.25% to 10% by weight monoethylenically unsaturated acid monomer.

15. (previously presented) An aqueous coating composition as claimed in claim 1, wherein the copolymerized units of monoethylenically unsaturated acid monomer comprise copolymerized sulfoethyl methacrylate or phosphoethyl methacrylate.

16. (previously presented) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a glass transition temperature (Tg) of –10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein from 0.078% to less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

17. (previously presented) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as

copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a Tg of –10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein from 0.03% to less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

18. (previously presented) An aqueous coating composition as claimed in claim 2, wherein the copolymerized units of monoethylenically unsaturated acid monomer comprise copolymerized sulfoethyl methacrylate or phosphoethyl methacrylate.

EVIDENCE APPENDIX [37 C.F.R. 41.37(c)(1)(ix)]

– DECLARATION OF MATTHEW S. GEBHARD
Submitted November 15, 2005 (2 pages) – entered on the record.

– EXHIBIT A
Standard Test Method for Scrub Resistance of Wall Paints (ASTM D 2486-00)
Submitted December 8, 2005 (4 pages) – entered on the record.

– FIRST DECLARATION OF RALPH C. EVEN
Submitted December 21, 2007 (8 pages) – entered on the record.

– SECOND DECLARATION OF RALPH C. EVEN
Submitted March 3, 2009 (11 pages) – entered on the record.

RELATED PROCEEDINGS APPENDIX – [37 C.F.R. 41.37(c)(1)(x)]

Appeal No. 2007-0504 (Application 10/700,078; Technology Center 1700)
Decided: June 28, 2007 (11 pages). On the record.